

Geometric Mean

What You'll Learn

Predict two things that you expect to learn based on the headings and the Key Concept box.

1. _____

2. _____

Active Vocabulary

Review Vocabulary Write the correct term next to each definition.

_____ ► an equation stating that two ratios are equal

_____ ► the numbers a and d in the proportion $\frac{a}{b} = \frac{c}{d}$

_____ ► the numbers b and c in the proportion $\frac{a}{b} = \frac{c}{d}$

New Vocabulary Complete each statement by filling in the blank with the correct term or phrase or writing the correct formula.

geometric mean ► The geometric mean of two positive numbers a and b is the number x such that _____.

The measure of the altitude drawn from the vertex of a right triangle to its hypotenuse is the geometric mean between the measures of the two segments of the _____.

The geometric mean of two positive numbers a and b can be calculated using the expression _____.

*(continued)***Main Idea****Details****Geometric Mean**

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Find the geometric mean between 8 and 18.

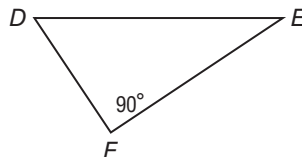
definition of geometric mean

Substitute for a and b .

Multiply.

Simplify.**Geometric Means in Right Triangles**

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Model Theorem 8.2, the Geometric Mean (Altitude) Theorem, by drawing a segment on right triangle DEF and writing a proportion.

Helping You Remember

A good way to remember a new mathematical concept is to relate it to something you already know. How can the meaning of *mean* in a proportion help you to remember how to find the geometric mean between two numbers?
